

Supplementary digital content 1: Characteristics and treatment details for n=73 children SARS-CoV-2 positive children and n=243 children with an influenza PICU admission in 2019

| Characteristic or intervention | N=73 SARS-CoV-2 positive children | N=243 children with influenza admission in 2019 | Difference in mean/proportion ^{††} (95% CI) |
|------------------------------------------------|-----------------------------------|-------------------------------------------------|------------------------------------------------------|
| Age group at first PICU admission, n(%) | | | |
| Neonate <30 days | 5 (6.9) | 7 (2.9) | 4.0% (-2.2% to 10.1%) ^α |
| Infant 31-365 days | 9 (12.3) | 47 (19.3) | -7.0% (-16.0% to 2.0%) ^α |
| Young child 1y-5y | 10 (13.7) | 99 (40.7) | -27.0% (-37.0% to -17.0%) ^α |
| Older child 6-12y | 25 (34.3) | 64 (26.4) | 7.9% (-4.3% to 20.1%) ^α |
| Teenager 13-18y | 24 (32.9) | 26 (10.7) | 22.2% (10.7% to 33.7%) ^α |
| Male, n(%) | 44 (60.3) | 142 (58.4) | 1.9% (-10.9% to 14.7%) ^α |
| Ethnicity, n(%) | | | |
| White | 27 (37.0) | 137 (56.4) | / * |
| Asian | 22 (30.1) | 34 (14.0) | |
| Black | 16 (21.9) | 9 (3.7) | |
| Other | 5 (6.9) | 9 (3.7) | |
| Mixed | 3 (4.1) | 5 (2.0) | |
| Unknown ^β | 0 (0.0) | 49 (20.2) | |
| Weight z score | | | |
| n(%) | 65 (89.0) | 110 (45.3) | / * |
| Mean (SD) | 0.31 (2.04) | -0.54 (2.04) | |
| Median (IQR) | 0.29 (-0.80, 1.62) | -0.41 (-1.37, 0.63) | |
| Townsend deprivation index score | | | |
| n(%) | 73 (100.0) | 225 (92.6) | 1.21 (0.20 to 2.22) [†] |
| Mean (SD) | 2.7 (4.05) | 1.5 (3.75) | |
| Median (IQR) | 3.33 (1.04, 6.27) | 1.20 (-1.83, 4.43) | |
| Unplanned admission, n(%) | 69 (94.5) | 235 (96.7) | -2.2% (-7.89% to 3.49%) ^α |
| Comorbidity^{††}, n(%) | | | |
| Neurological/Developmental [‡] | 18 (24.7) | 59 (24.3) | |

| | | | |
|-----------------------------------------------------------|-------------------|-------------------|----------------------------------------|
| Congenital Heart/Cardiac Disease | 9 (12.3) | 17 (7.0) | / ^Λ |
| Inherited genetic/chromosomal abnormalities | 9 (12.3) | 9 (3.7) | |
| Pre-term | 8 (11.0) | 30 (12.3) | |
| Malignancy† | 3 (4.1) | 2 (0.8) | |
| Metabolic/Endocrine** | 3 (4.1) | 5 (2.1) | |
| Chronic Pulmonary Disease | 2 (2.7) | 18 (7.4) | |
| Blood disorder | 0 (0.0) | 4 (1.6) | |
| Chronic kidney/liver disease | 0 (0.0) | 6 (2.5) | |
| PIM3_POD % | | | |
| Mean (SD) | 4.6 (6.74) | 4.7 (6.87) | -0.16 (-1.96 to 1.63) [†] |
| Median (IQR) | 3.17 (1.24, 5.09) | 3.34 (1.22, 5.05) | |
| Maximum respiratory support[¶], n(%) | | | |
| High frequency oscillatory or jet ventilation | 3 (4.1) | 22 (9.1) | -5.0% (-10.8% to 0.8%) ^α |
| Invasive mechanical ventilation | 42 (57.5) | 161 (66.3) | -8.8% (-21.6% to 4.0%) ^α |
| Non-invasive ventilation | 5 (6.9) | 19 (7.8) | -0.9% (-7.6% to 11.2%) ^α |
| High flow nasal cannula therapy | 5 (6.9) | 26 (10.7) | -3.8% (-10.8% to 3.2%) ^α |
| None | 18 (24.7) | 15 (6.2) | 18.5% (8.2% to 28.8%) ^α |
| Invasive ventilation | | | |
| Total length [¶] of invasive ventilation in PICU | | | |
| (days) n(%) | 44 (60.3) | 181 (74.5) | -14.2% (-26.7% to -1.73%) ^α |
| Mean (SD) | 13.8 (29.37) | 10.8 (31.86) | |
| Median (IQR) | 5 (3-11) | 5 (3-10) | |
| Respiratory support | | | |
| Total length [¶] of respiratory support in PICU | | | |
| (days) n(%) | 50 (68.4) | 217 (89.3) | -20.9% (-32.3% to -9.5%) ^α |
| Mean (SD) | 13.3 (28.52) | 10.5 (29.81) | |
| Median (IQR) | 5 (3-10) | 5 (3-10) | |
| Vasoactive support | | | |
| Total length [¶] of vasoactive support in PICU | | | |
| (days) n(%) | 37 (50.7) | 84 (34.6) | 3.4% (-10.8% to 4.0%) ^α |
| Mean (SD) | 6.4 (7.22) | 5.8 (7.84) | |
| Median (IQR) | 4 (3-6) | 4 (2-7) | |
| Inhaled nitric oxide[¶], n(%) | 7 (9.6) | 18 (7.4) | 2.2% (-5.3% to 9.7%) ^α |

| | | | |
|-----------------------------------------------------------------|----------------|-------------------------|-------------------------------------|
| Renal replacement therapy[¶], n(%) | 4 (5.5) | 16 (6.6) | 1.1% (-7.2% to 5.0%) ^α |
| Extracorporeal life support[¶], n(%) | 3 (4.1) | 4 (1.6) | 2.5% (-2.4% to 7.3%) ^α |
| Outcome^ϕ, n(%) | | | |
| Discharged alive | 66 (90.0) | 227 [Ⓟ] (93.4) | 3.4% (-10.8% to 4.0%) ^{αδ} |
| Died in PICU | 7 (9.6) | 15 (6.2) | |
| Total length[¶] of PICU care (days)^Ω | | | |
| n(%) | 73 (100.0) | 242 (99.6) | 2.3 (-3.5 to 8.1) ^γ |
| Mean (SD) | 11.6 (24.02) | 9.2 (12.15) | |
| Median (IQR) | 5.0 (2.5-11.0) | 5.0 (2.4-9.8) | |

CI = confidence interval; IQR = interquartile range; PIM3_POD = pediatric index of mortality 3 predicted

probability of death; π SARS-CoV-2 cohort minus influenza cohort; γ obtained from two sample independent t-test assuming unequal variances; α obtained from two sample test of proportions; τ obtained from two sample independent t-test assuming equal variances; * no difference or confidence intervals presented due to the differential proportions of missing data; β unknown ethnicity includes “unknown” ethnicity (n=18), missing ethnicity (n=9) and declined, n=31; λ no statistical testing conducted due to difference in completion styles of comorbidities between units; $\dagger\dagger$ comorbidities not mutually exclusive; \ddagger Neurological/developmental including autism, epilepsy, cerebral palsy; ******metabolic/endocrine including diabetes; \dagger malignancy including leukaemia, lymphoma, solid tumours; [¶] where a child had multiple admission events the number of days is summed across all events; ^ϕ where a child had multiple admission events, the status from the last recorded admission is presented; [Ⓟ] one flu cohort patient still in PICU; δ difference calculated based on proportion of children surviving PICU; ^Ω for completed PICU care episodes.